

The configuration of MPLS TE Using Static CR-LSP In MSR Series

**Keywords:**MSR;MPLS TE;CR-LSP

**I Requirement for the diagram**

Using static CR-LSP to set up a MPLS tunnel from RTA to RTC.

Device list: 3, MSR Series Router

CMW Version: Version 5.20, Beta 1106

**II Network topology**

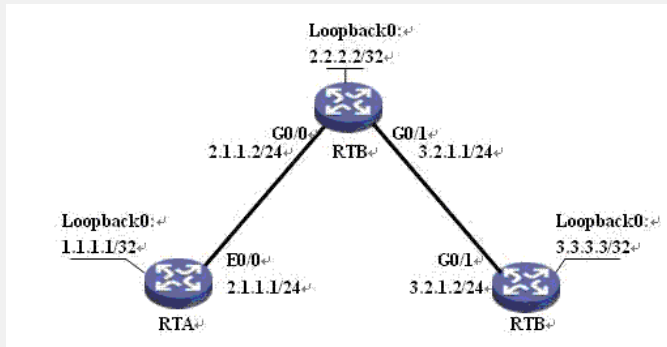


Figure 1-1 Using static CR-LSP to set up a MPLS TE Tunnel

**III Steps of configuration**

```

RTA
#
//Config basic ability of MPLS TE
mpls lsr-id 1.1.1.1
#
mpls
mpls te
#
isis 1
network-entity 00.0005.0000.0000.0001.00
#
interface Ethernet0/0
port link-mode route
ip address 2.1.1.1 255.255.255.0
isis enable 1
//Config MPLS TE of this interface
mpls
mpls te
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
isis enable 1
#
interface Tunnel0
ip address 6.1.1.1 255.255.255.0
tunnel-protocol mpls te
destination 3.3.3.3
mpls te signal-protocol static
mpls te commit
#
//Config routing which point to tunnel interface
ip route-static 3.3.3.3 255.255.255.255 Tunnel0 preference 1
#
//Config RouterA as static CR-LSP ingress node
static-cr-lsp ingress Tunnel0 destination 3.3.3.3 nexthop 2.1.1.2 out-label 20

bandwidth bc0 0
    
```

**RTB**

```

#
mpls lsr-id 2.2.2.2
#
mpls
mpls te
#
isis 1
network-entity 00.0005.0000.0000.0002.00
#
interface LoopBack0
ip address 2.2.2.2 255.255.255.255
isis enable 1
#
interface GigabitEthernet0/0
port link-mode route
ip address 2.1.1.2 255.255.255.0
isis enable 1
mpls
mpls te
#
interface GigabitEthernet0/1
port link-mode route
ip address 3.2.1.1 255.255.255.0
isis enable 1
mpls
mpls te
#
//Config RouterB as static CR-LSP middle node:
static-cr-lsp transit tunnel0 incoming-interface GigabitEthernet0/0 in-label 20 nexth
op 3.2.1.2 out-label 30

```

#### RTC

```

#
mpls lsr-id 3.3.3.3
#
mpls
mpls te
#
isis 1
network-entity 00.0005.0000.0000.0003.00
#
interface LoopBack0
ip address 3.3.3.3 255.255.255.255
isis enable 1
#
interface GigabitEthernet0/1
port link-mode route
ip address 3.2.1.2 255.255.255.0
isis enable 1
mpls
mpls te
#
//Config RouterC as static CR-LSP out-going node
static-cr-lsp egress tunnel0 incoming-interface GigabitEthernet0/1 in-label 30

```

#### IV Key notes in the configuration

- 1) Using ISIS protocol to connect different device;
- 2) Config MPLS TE under global view;
- 3) Config Static CR-LSP;

#### V Check Result

- 1) Check the tunnel info of MPLS TE:

```
[rta]display mpls te tunnel
```

LSP-Id	Destination	In/Out-If	Name
1.1.1.1:0	3.3.3.3	-/Eth0/0	Tunnel0

```
<rtb>display mpls te tunnel
```

LSP-Id	Destination	In/Out-If	Name
-	-	GE0/0/GE0/1	tunnel0

```
<RTC>display mpls te tunnel
```

LSP-Id	Destination	In/Out-If	Name
-	-	GE0/1/-	tunnel0

```
<RTC>
```

- 2) Check the state of tunnel interface:

```
[rta]display interface Tunnel 0
```

```
Tunnel0 current state: UP
```

```
Line protocol current state: UP
```

```
Description: Tunnel0 Interface
```

```
The Maximum Transmit Unit is 64000
```

```
Internet Address is 6.1.1.1/24 Primary
```

```
Encapsulation is TUNNEL, aggregation ID not set
```

```
Tunnel source unknown, destination 3.3.3.3
```

Tunnel protocol/transport CR\_LSP

Last 300 seconds input: 0 bytes/sec, 0 packets/sec

Last 300 seconds output: 0 bytes/sec, 0 packets/sec

0 packets input, 0 bytes

0 input error

34 packets output, 2504 bytes

0 output error

3) Check the routing table of RTA:

[rta]dis ip rou

Routing Tables: Public

Destinations : 10 Routes : 10

Destination/Mask	Proto	Pre	Cost	NextHop	Interface
1.1.1.1/32	Direct	0	0	127.0.0.1	InLoop0
2.1.1.0/24	Direct	0	0	2.1.1.1	Eth0/0
2.1.1.1/32	Direct	0	0	127.0.0.1	InLoop0
2.2.2.2/32	ISIS	15	10	2.1.1.2	Eth0/0
3.2.1.0/24	ISIS	15	20	2.1.1.2	Eth0/0
<b>3.3.3.3/32</b>	<b>Static</b>	<b>1</b>	<b>0</b>	<b>6.1.1.1</b>	<b>Tun0</b>
<b>6.1.1.0/24</b>	<b>Direct</b>	<b>0</b>	<b>0</b>	<b>6.1.1.1</b>	<b>Tun0</b>
6.1.1.1/32	Direct	0	0	127.0.0.1	InLoop0
127.0.0.0/8	Direct	0	0	127.0.0.1	InLoop0
127.0.0.1/32	Direct	0	0	127.0.0.1	InLoop0